DOCUMENT RESUME

ED 261 456 EA 017 974

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TITLE School Size and School Disorder.
INSTITUTION Johns Hopkins Univ., Baltimore, Md. Center for Social Organization of Schools.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
REPORT NO CSOS-R-360
PUB DATE Jul 85
GRANT NIE-G-83-0002
NOTE 56p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Administrative Problems; Case Studies; Coordination; Delinquency Causes; *Discipline Problems; *Educational Environment; Elementary Secondary Education; Organizational Communication; Organizational Effectiveness; Regression (Statistics); School Security; *School Size; *School Supervision; Social Control
IDENTIFIERS Manning Theory

ABSTRACT

This paper uses a national survey of secondary schools to examine the relation between size and orderliness in secondary schools and to test alternative theories linking school disorder to school size. Manning theory and social control theory, taken together, predict that larger schools will experience more disruption because a smaller proportion of the student population will be involved in meaningful activities. In addition, previous research suggests that larger schools experience more disorder because they cannot be managed as effectively as small schools due to communication problems. This study uses regression analyses and case studies of schools that underwent shifts in enrollment to examine the tenability of each of the foregoing perspectives. Results imply that school size is related to school safety, and that administrative problems in large schools, such as breakdown in communication, inadequate feedback about performance, and lack of staff involvement in decision-making, are likely to link school size to school disorder. The results lend no support, however, to speculations that school disorder arises in large schools because they are more impersonal than small schools.(Author/TE)

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School Size and School Disorder

Grant No. NIE-G-83-0002

Denise C. Gottfredson

Report No. 360

July 1985

Published by the Center for Social Organization of Schools, supported in part as a research and development center by funds from the National Institute of Education, U. S. Department of Education. The opinions expressed in this publication do not necessarily reflect the position or policy of the National Institute of Education, and no official endorsement by the Institute should be inferred.

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Printed and assembled by VSP Industries
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The Center

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through three research programs to achieve its objectives. The School Organization Program investigates how school and classroom organization affects student learning and other outcomes. Current studies focus on parental involvement, microcomputers, use of time in schools, cooperative learning, and other organizational factors. The Education and Work Program examines the relationship between schooling and students' later-life occupational and educational success. Current projects include studies of the competencies required in the workplace, the sources of training and experience that lead to employment, college students' major field choices, and employment of urban minority youth. The Delinquency and School Environments Program researches the problem of crime, violence, vandalism, and disorder in schools and the role that schools play in delinquency. Ongoing studies address the need to develop a strong theory of delinquent behavior while examining school effects on delinquency and evaluating delinquency prevention programs in and outside of schools.

The Center also supports a Fellowships in Education Research program that provides opportunities for talented young researchers to conduct and publish significant research and encourages the participation of women and minorities in research on education.

This report, prepared by the Delinquency and School Environments Program, uses a national survey of secondary schools to examine the relation between size and orderliness in secondary schools and to test alternative theories linking school disorder to school size. An earlier version of this paper was presented at the annual meeting of the American Educational Research Association, Chicago, April, 1985.

Acknowledgments

I wish to thank Dennis Cuddy, Gary Gottfredson, and John Hollifield for helpful comments on this paper and Rana Mazumder, Renee Castenada, and Lois Hybl for clerical assistance.

Abstract

Educational policy makers, practitioners, and researchers need information about the effects of school size on school climate and student psychosocial and academic outcomes. Policy makers need to weigh potential negative effects of reorganization against savings in operational costs, and planners need to understand the mechanisms through which changes in school size affect student outcomes. This paper uses a national survey of secondary schools to examine the relation between size and orderliness in secondary schools and to test alternative theories linking school disorder to school size.

Manning theory and social control theory, taken together, predict that larger schools will experience more disruption because a smaller proportion of the student population will be involved in meaningful activities. According to manning theory, more students in large schools will lack a sense of belonging and obligation to the organization. Hence, students will be freer to engage in delinquent activities. In addition, previous research suggests that larger schools experience more disorder because they are not managed as effectively as small schools. Communication breaks down, cooperation between faculty and administration in planning and implementing effective programs is reduced, and school discipline policies and practices are unclear in larger schools.

This study uses regression analyses and case studies of schools that underwent shifts in enrollment to examine the tenability of each of the foregoing perspectives. Results imply that school size is related to school safety, and that aspects of the school administration are likely to link school size to school disorder. Results lend no support to speculations that school disorder arises in large schools because large schools are more impersonal than small schools.

School Size and School Disorder

Large schools experience more disorder than small schools. Several theories imply various specific links between school size and disorder, but the implied links have not been tested. Research on school size is timely because large projected decreases in the high school-aged population for many parts of the country for the next decade will require educational planners and policy makers to make decisions that will influence school size. We need to examine the effects of school size on school disorder for two reasons: (a) Policy makers need information about the effects on school climate and on student psychological and academic functioning and, (b) educational leaders need to understand how school size influences school climate--what mediating structures can be manipulated to reap the benefits offered by schools of different sizes regardless of actual school size?

The positive correlation between school size and school disorder is small, but has appeared consistently across studies. McPartland and McDill (1977) showed that in a sample of 938 schools having a ninth grade and 792 schools having a twelfth grade, school size accounted for between two and six percent of the variance in principal reports of the severity of behavior problems in their schools after variance in problem behavior associated with school socioeconomic factors was controlled. The Safe School Study (National Institute of Education, 1978) found that school size was weakly but positively related to violent school crime in five of the six types of schools examined, and that it was positively

correlated with property loss in all schools. In more thorough analyses of the same data Gottfredson and Gottfredson (in press) found school size to be positively related to teacher reports of victimizations in 311 junior high schools and 312 senior high schools, and these associations remained for junior high schools after community characteristics and externally-determined characteristics of the student population were statistically controlled.

Speculations about the mechanisms underlying the school size-disruption connection are abundant. Two themes appear in the literature: (a) School administration is more cumbersome and hence less effective in larger schools; (b) student participation in school activities is lower in large schools, so students have fewer meaningful roles and hence are more alienated from the social order and freer to engage in misconduct.

School administration. Several aspects of school administration have been linked to disruption levels. NIE (1978) and Gottfredson and Gottfredson (in press) concluded that school governance policies and procedures are important determinants of the level of disorder a school experiences. These studies provide persuasive evidence that clear discipline policies and practices and consistent application of them are associated with low levels of school disruption. McPartland and McDill (1977) also implicated school governance practices when they suggested that the anonymity of large schools makes it more difficult for schools to respond appropriately to student misbehavior. Students are easily lost in the shuffle and left to their unsupervised activities.

The opposite prediction is made by Garbarino (1978). He suggests that bureaucratic structures and processes, such as increased reliance on rules and regulations for governing behavior and stricter schedules, alienate students in large schools. He associates the presence of a strict and firmly enforced discipline code with an impersonal environment, and hypothesizes that the impersonal quality of relationships and the inflexible nature of the administration in large schools also extend to school staff, creating low morale and an unwillingness on the part of the staff to respond in innovative ways to problems.

Another difference in administrative practices of small and large schools that might effect school disruption is the extent to which students participate in school decisionmaking. McPartland and McDill (1977) and Garbarino (1978) suggest that student access to decisionmaking roles may help explain school disruption, but this hypothesis has no empirical support. Both teacher and student reports of student participation in school decisionmaking in a study of 642 schools were positively correlated with the level of disruption a school experiences (Gottfredson and Gottfredson, in press). In the junior high schools in this study, teacher reports retain their significance after community characteristics, characteristics of the student population which are externally determined, and school staffing, resources, and size are statistically controlled. In another study of 44 schools (Gottfredson, 1985), teacher and student reports of student influence in decisionmaking were not significantly related to school safety, classroom orderliness or teacher victimizations. Neither was student influence significantly related to school size. It is unlikely that increasing students'

roles as school decisionmakers within the range typically found in practice in secondary schools would reduce school disorder.

The Gottfredson and Gottfredson results imply that other aspects of school administration--low levels of coordination between faculty and administration and confusion about school policies--may lead to school disorder. The associations between these school characteristics and disorder also hold up when statistical controls are applied.

Some research links these administrative practices to school size. Eberts, Kehoe and Stone (1984) show that teachers' perceptions of several aspects of the school administration are significantly more positive in smaller elementary schools: They reported more often that the school's programs are well-planned and clear, that the teachers in the school work well together, that the administrators keep the teachers well-informed, and that conflicts among individuals are identified, faced, and not allowed to fester. Winkler (1980) found school size to be related to teacher sick leave, especially for absences on Fridays and Mondays. If we can assume that teacher absenteeism results in part from poor administrative practices, Winkler's findings suggest a link between school size and school administration. Related research shows the number of full-time teachers in a school to be related to communication within the school (Bridges and Hallinan, 1978) and to structural characteristics of the teaching job such as cross-grade teaching, joint teaching, frequency of communications regarding educational issues, and frequency of teacher conferences regarding classroom activities (Abramowitz, 1977).

Student participation. A second general theme links school size to disorder via level of participation in extracurricular activities. In small schools, a greater proportion of students are involved in extracurricular ... vities (Baird, 1969; Barker and Gump, 1964; Devney, 1978; Grabe, 1981; Kleinert, 1969; Wicker, 1969). Participation in extracurricular activities and membership in organizations with a high press for participation are theorized to increase students' sense of self-worth and responsibility (McPartland and McDill, 1977). Garbarino (1978) adds that alternative (nonacademic) school experiences may be especially potent restraints against delinquent behavior for "marginal" students who have academic difficulty. Participation in school activities may give these students the opportunity to experience success and develop a sense of personal identity and commitment to school. In the absence of such experiences, students sever their allegiance to the school and a climate of normlessness allows misbehavior to flourish. The detrimental effects of large school environments for participation in extracurricular activities and for sense of obligation among marginal students is documented in Willems (1967).

Social control theory (Hirschi, 1969) and manning theory (Barker and Gump, 1964) explain why schools of different sizes might experience different degrees of disruption. According to Hirschi, bonding to the social order provides a restraint against engaging in delinquent activities. Attachment to others, involvement in conventional activities, belief in the validity of laws, and commitment to socially appropriate goals hold individuals "in check"--bonded youths have too much to lose by misbehavior.

Manning theory illustrates how school size might affect level of participation in conventional activities: People within a behavior setting recruit the requisite number of persons to keep an activity functioning. Behavior settings in small schools more frequently fall below the number of students necessary for optimal functioning than those in large schools. Therefore, students in small schools are subject to greater pressure to participate and pressure to participate in a greater variety of activities than are students in large schools. Thus, students in small schools are hypothesized to respond to the increased pressure to participate by a) participating in more activities and in a wider variety of activities; b) achieving greater functional importance within the setting; c) feeling a greater sense of individual responsibility to maintain the activity; and d) creating a greater functional self-identity.

Manning theory hypothesizes that smaller school environments promote more pressure for youths to become involved in more and a greater variety of activities because there are fewer students available to fill the necessary slots to run the activities. This pressure creates a sense of obligation within the student to "pitch in." The student commits his or her time and energy to the activity and becomes invested in it. The student develops attachments to the students and adults with whom he or she is working. Social control theory hypothesizes that involvement in the activity and the commitment and attachment that develop as a result of the involvement provide effective restraints against delinquent behavior. Manning theory (Baird, 1969; Barker and Gump, 1964; Downey, 1978; Grabe, 1981; Kleinert, 1969; Wicker, 1969) and

social control theory (Gottfredson, 1984; Hindelang, 1973; Hirschi, 1969; Wiatrowski, Griswold and Roberts, 1981) have received considerable empirical support.

Specific examinations of the effect of involvement in extracurricular activities (Dawkins and Braddock, 1982; D. Gottfredson, 1984) on self-reported delinquent behavior suggest a small but significant negative effect. The Dawkins and Braddock study examined only participation in sports, and controlled for some background characteristics and some behaviors and attitudes related to delinquency. The Gottfredson study examined two national longitudinal samples and reported that participation in extracurricular activities decreases some kinds of delinquency for some age groups, even when prior delinquent activities are statistically controlled. The largest effects of participation are on a scale measuring delinquent behavior in school--items ranging from "smoked in school" to "hit a teacher."

Less direct evidence about the effect of participation on school disruption connects involvement in extracurricular activities with bonding to the social order: Otto (1976) showed that participation in extracurricular activities is positively and significantly related to educational attainment net of effects of socioeconomic status, ability and academic performance in schools. Hanks and Eckland (1976) found a positive effect only for nonathletic extracurricular activities. Their results suggest that participation in other activities increases grades, friendships with college-bound peers, discussions with teachers and counselors about college, and number of years of education obtained.

These analyses also control for social and educational background, ability, and educational expectations. Gottfredson (1984) also found involvement in extracurricular activities to be positively and significantly related to commitment to educational goals.

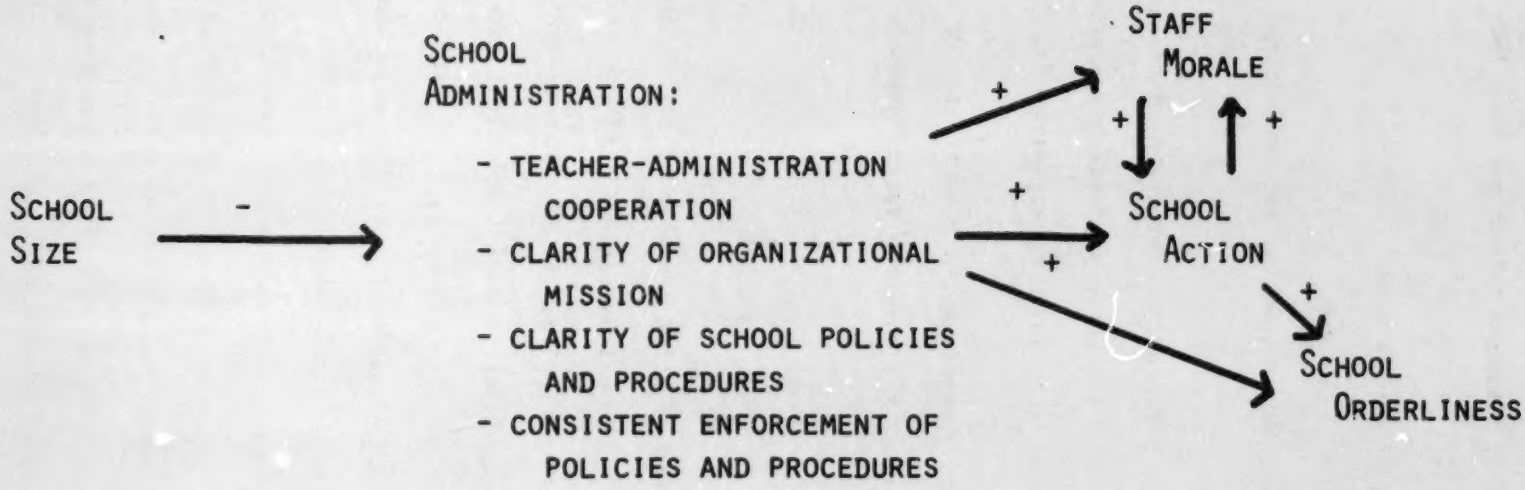
To summarize, school size is weakly but positively related to school disruption. Possible explanations for this association are:

I. School administration practices are more cumbersome and less effective in large than in small schools. Weak management leads to
   a) the absence of a clear discipline policy which is firmly and consistently enforced;
   b) low levels of communication and cooperation between the school administration and the faculty, and
   c) confusion among staff about organizational goals, policies and practices.

   These conditions lead to low morale and a failure of school staff to work together to design and implement effective strategies to reduce school disruption. Figure 1 diagrams this perspective.

II. Student participation in extracurricular activities is lower and less varied in large than in small schools. Membership in an organization which exerts little or no pressure to participate results in low levels of participation and in alienation. Alienation affects school disorder directly because alienated youths are not integrated enough into the social order to benefit from social constraints. It also affects school disorder indirectly via its effects on participation. Low levels of participation result in

FIGURE 1



SCHOOL ADMINISTRATION AS A LINK BETWEEN SCHOOL SIZE AND SCHOOL ORDERLINESS

a) low commitment of time and talent and sense of responsibility to the organization;

b) low attachment to others; and

c) low functional self-concept.

These factors contribute to delinquent activities. Figure 2 shows this perspective.

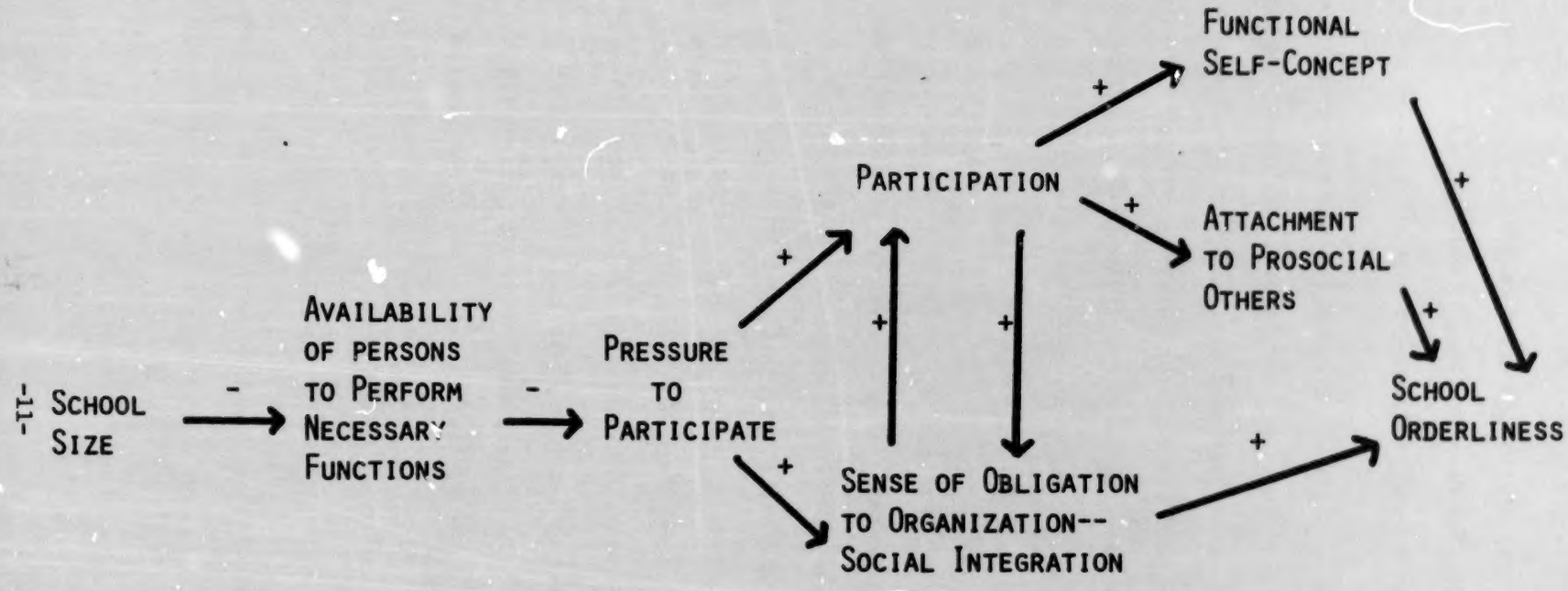
III. The effects of low rates of participation on marginal students are more detrimental than for other students because marginal students have few other avenues by which to experience success in school.

The present research examines the plausibility of each of these ideas as an explanation of the observed relationship between school size and school disruption.

Method

Regression analyses relating measures of school disruption to school size and the theoretical variables linking disruption to size were performed using the School Action Effectiveness Study (SAES) teacher and student school survey data. Principal surveys provided additional measures of school characteristics. SAES data were collected as part of the national evaluation of the Office for Juvenile Justice and Delinquency Prevention's Alternative Education Initiative (G. Gottfredson, 1982; Gottfredson, Gottfredson and Cook, 1983). Sixty-nine schools in seventeen cities were funded to operate alternative education projects and to demonstrate the utility of this approach to juvenile delinquency prevention. The participating schools were located in Chicago, South Bronx, Harlem, Compton (CA), Charleston (SC), Houston,

FIGURE 2



PARTICIPATION AS A LINK BETWEEN
SCHOOL SIZE AND SCHOOL ORDERLINESS

Miami, and St. Paul (MN), Kalamazoo and Plymouth (MI), Pasadena (CA), four towns in southern New Jersey, Ponce (Puerto Rico), Christiansted (Virgin Islands), and a rural Indian reservation in Wisconsin.

"Alternative" schools, i.e., extremely small schools serving a special student population, and elementary schools were excluded from this study. The issue of school size and school disruption is most central to secondary schools, and preliminary analyses indicated that including the (smaller) elementary schools in the study produced ambiguous results. Forty-two of the sixty-nine SAES schools are retained for this study.

Surveys of students and teachers in participating schools were conducted in the Spring of 1982. The teacher survey was administered to all teachers in the participating schools. The student sample consists primarily of students selected randomly from grades 6 through 12 of the schools' student populations. Each year approximately 200 students were randomly selected from each school. Also, all students who were part of an experimental manipulation within each school (about 10% of the total sample) were included in the survey sample. Student survey responses are weighted in all school-level analyses by the inverse of the sampling probability. School averages are therefore representative of the schools' populations.

Measures

The item content and psychometric properties and the scales included in the SAES surveys are described in detail elsewhere (Gott-

fredson et al., 1983; Gottfredson, 1985). "Climate scales" are scales based on teachers' and students' reports of their environments. Individual variation within schools was considered error variance in the construction of these scales (i.e., the school means for each item in the scale were summed to form the scale score). Homogeneity coefficients reported for these scales are alpha coefficients calculated from the correlations among items aggregated to the school level. They represent the ratio of true score to total variance in the scales for the measurement of schools rather than individuals.

Other scales in the study measure characteristics of individual teachers and students in the schools. The scales are constructed at the individual level (i.e., the items are summed for each individual). These scales also appear in school-level analyses. They should be interpreted as average student and teacher characteristics. Reliabilities reported for these scales are alpha reliabilities computed using the individual as the unit of analysis. The measures used in this study are as follows:

Disruption Measures

Student victimization. Students reported instances of personal victimization that had occurred in the last month. Items range in seriousness from "Did anyone steal something worth less than $1..." to "Did anyone threaten you with a knife or gun?" The resulting five-item scale has a reliability coefficient of .69.

Teacher victimization. This is similar to the student measure described above. Teachers reported on incidents that ranged in seriousness from obscene remarks or gestures to physical attack. The resulting 8-item scale has a reliability coefficient of .67.

School safety--student reports. (Climate measure) This is a 13-item scale asking if students stay away from any of a list of places in the school. It also asks if students feel safe at school or if they fear someone will hurt them. Its reliability is .94.

School safety--teacher reports. (Climate measure) This 10-item scale measures teachers' perceptions of the safety of their schools. It asks, for example, how safe the classrooms, halls, restrooms, etc. are. Its reliability coefficient is .94.

Self-reported serious delinquency. This scale is composed of items asking the student to report if he or she engaged in eleven specific criminal activities in the last year. Examples of items are "stolen or tried to steal something worth more than $50" and "carried a hidden weapon." The reliability of this scale is .83.

Self-reported drug involvement. This is a 5-item scale composed of items asking the student to report whether or not he or she had used certain drugs in the last year. Its reliability is .75.

Background Measures

Student Characteristics

Marginality. This is a 6-item scale intended to measure the probability of academic success. Students' reports of grade point average, reading ability, educational expectations, others' perception of the student as a good student, and the educational level of the students' mother and father are averaged to form this scale. Its reliability is .65. For many analyses, this measure was standardized using the mean and standard deviation for the student's school. In these analyses, marginality is defined with respect to the students' particular school environment.

Age. This is as reported by the student.

School Characteristics

Average student responses to inquiries regarding age and race (coded so that black = 1 and all other responses = 0), and their perceptions of the community crime level were used as control variables in school-level analyses. Principal reports of the population of the area and the percentage of students on welfare were also used as control variables. School enrollment is reported by the principal.

Measures of Theoretical Variables

Student Attitudes

Social integration. This scale from the Effective School Battery (ESB; Gottfredson, 1985) is intended to measure the individual's sense of belonging in the school. It is the closest we could come to a measure of the variable central to manning theory--sense of obligation or responsibility to the organization. The scale consists of 6 items like: "I feel like I belong in this school," and "I feel no one really cares much about what happens to me." The reliability coefficient of this scale is .51.

Interpersonal competency. This five-item scale from the ESB measures social adjustment. It is related to the theoretical constructs of functional self-concept. It contains items like: "If I want to, I can explain things well," and "I find it easy to talk with all kinds of people." The reliability coefficient of this scale is .43.

Positive self-concept. This twelve-item scale from the ESB measures general self-concept and aspects of self-concept specific to schooling and delinquency. It contains general items like: "Sometimes I think I am no good at all," and "I like myself" as well as specific items such as "I am not the kind of person you would expect to get in trouble with the law," and "How satisfied are you with the way you are doing in school?" The reliability coefficient of this scale is .61.

Attachment to school. This ten-item scale from the ESB measures a construct central to a social control theory explanation of delinquency that views attachment to school as a major social bond restraining youths from participation in delinquent activities. It contains items such as "I have lots of respect for my teachers," and "How important to you is what the teachers think about you?" The reliability coefficient of this scale is .76.

Participation

Participation in any activity. Students received a score of "1" if they reported spending time during the current school term in any one of twelve kinds of activities in a checklist. Ten of the activities were school activities such as athletic teams and clubs. Two were community activities--youth organizations and church groups.

Variety of participation. This is the total number of different activities that a student reported spending time in from the checklist described above. The reliability of this 12-item scale is .62.

Administration

Smooth administration. (Climate measure) This 12-item scale from the ESB teacher survey contains items like "Simple, non-time consuming procedures exist for the acquisition and use of resources," and "Teachers and administrators get along at this school." Its reliability is .93.

Planning and action. (Climate measure) This 9-item teacher scale from the ESB asks items such as "How often do you work on a planning committee with other teachers?" and "(Is the principal) progressive?" Its reliability is .89.

Clarity of school rules. (Climate measure) This 4-item scale from the ESB student survey is composed of questions asking whether everyone knows what the rules are, whether teachers let students know what is expected of them, and whether the principal is firm. Its reliability is .67.

Staff morale. (Climate measure) This 11-item scale from the ESB teacher survey contains items such as "Our problems in this school are so big that it is unrealistic to expect teachers to make much of a dent in them" and "(Is the teaching faculty) frustrated?" Its reliability is .94.

Results

Ideally, a test of manning theory would proceed at the level of the behavior setting, and extent of undermanning would be operationalized as the number of students available to fill the essential positions in a setting divided by the number of positions necessary for optimal functioning of the activity. A summary measure for the organization would be based on the summation across all behavior settings in the school of this critical ratio (Wicker, McGrath and Armstrong, 1972).

We use school enrollment to indicate the degree of undermanning for our school-level analyses, which assumes that all students in the school are potential participants in each behavior setting and that the number of essential slots is equivalent across schools. We cannot determine the extent to which the first assumption is violated because we have no data on eligibility requirements for extracurricular activities. We believe that the second assumption is safe because each of the activities covered by the survey was offered in every school in the study, and

the list of activities in the survey is fairly exhaustive and not biased in any important way.

For individual-level analyses, we would ideally compare the effect of participating in undermanned activities to the effect of participating in adequately or overmanned activities. Instead we compare the effect of participation in schools of different sizes. Using school enrollment as a proxy measure for degree of undermanning in individual-level analyses assumes minimal variation across activities within a school of a given size on degree of pressure exerted on the individual. It assumes that each behavior setting in a school of a given size has roughly the same number of essential positions to fill. We have no data at the behavior setting level with which to check this assumption, but prior research (Willems, 1967) has demonstrated that students in small schools do experience more pressure to participate than do students in large schools. Although a measure of the degree of pressure exerted on the individual in each activity would be desirable, school enrollment is a defensible proxy measure.

School Level Analyses

The "school administration" theory, as shown in Figure 1, predicts that school size is related to the level of teacher-administration cooperation, the clarity of the organizational mission, and the clarity and consistent enforcement of school policies. These characteristics of the school administration are theorized to affect staff morale and efforts to improve the organization. These climate factors affect school orderliness.

Manning theory, as shown in the model in Figure 2, predicts that school size is related to the percentage of students involved in extra-curricular activities, the variety of that participation, and the sense of obligation, commitment and attachment to the school. Social control theory predicts that commitment to socially appropriate goals, involvement in conventional activities, and attachment to the school will reduce delinquency.

Table 1 shows the contributions of blocks of predictors specific to each theory to the explanation of school disruption. The first row of the table shows the total association of five background characteristics--percentage of students Black, principal reports of the percentage of families on welfare, the population of the area, average age of the students, and student reports of crime level in the community--with each of the six disorder measures. The remaining rows show the total association and unique contribution of each set of predictors in the two theoretical models. The total association is the proportion of variance in the outcome explained when only the variables in the predictor set are entered into the equation. The unique contribution is the proportion of variance in the disorder measures uniquely explained by enrollment, i.e., the contribution of the variables in the predictor set once all preceding variables (all variables to the left of the set according to the model in Figure 1 or 2) are controlled.

According to Table 1, the five background factors account for between one-third and two-thirds of the total between-school variance in school disorder. The findings for enrollment accord with previous evi-

Table 1

Total Associations and Net Contributions
of Blocks of Predictors in Two Models of School Disorder
(N=42 Schools)

Predictor set	Measure of school disorder					
	Student victimization	Student safety	Serious delinquency	Drug involvement	Teacher victimization	Teacher safety
Background	.58**	.62**	.32**	.53**	.30**	.38**
Enrollment	.24**	.02	.02	.15*	.02	.18**
	.03	.05*	.04	.00	.04	.11**
Manning theory:						
Participation	.13	.16*	.05	.26**	.15*	.23**
	.03	.03	.06	.05	.13*	.05
Attitudes	.38**	.73**	.63**	.52**	.46**	.33**
	.19**	.15**	.33**	.21**	.16**	.06
Total R^2	.83**	.85**	.75**	.79**	.63**	.60**
Administration theory:						
Administration and morale	.11	.35**	.26*	.33**	.46**	.63**
	.09	.08	.20*	.13*	.25**	.27**
Total R^2	.70**	.75**	.56**	.66**	.58**	.76**

Note. The first row for each predictor set shows the proportion of variance in the outcome explained when only variables in that set are in the equation. The second row shows the increment to the explained variance when the variables in that predictor set are added to an equation containing all variables to the left of that predictor set in Figure 1 or 2.

*$p<.05$.
**$p<.01$.

dence showing school size to be a weak predictor of school disruption. Significant zero-order correlations between school disorder and school enrollment are observed for three of the six disruption measures, but only for school safety does the association remain when controls for the age of students, their ethnicity and social background, the population of the area, and the level of crime in the community are applied.

Participation in extracurricular activities--which in this table is measured by both percent participating at all and variety of participation--also contributes little to the explanation of school disorder--between three and thirteen percent. Only for the Teacher victimization outcome is the increment to explained variance significantly different than zero. The student attitude variables--social integration, attachment to school, positive self-concept, and interpersonal competency--are powerful predictors of school disorder as reported by students. Between thirteen and thirty percent of the variance in student-reported school disorder is accounted for uniquely by the attitude variables, but the results do not indicate that these attitudes are generated by participation.

The administration variables--teachers' perceptions of the administration of the school, their reports of planning and action in the school, staff morale, and student reports of clarity of school rules--contribute significantly to the explanation of student serious delinquency, drug involvement, teacher victimization and teacher reports

of school safety.[1] The increment to the explained variance ranges from eight to twenty-seven percent.

To summarize, the association between school enrollment and school disorder is weak. For only two of the six measures of school disorder is there evidence of a causal link between size and disorder. Neither of the theories linking school size to school disorder receives much support from Table 1. Student attachment to school, self concept, social integration and interpersonal competency are highly related to school disorder, but these attitudes are not affected by school enrollment. The key variable linking school size to school disorder according to manning theory--participation--has a significant effect only on teacher victimization.

As with the student attitude variables, the administration and morale/action predictors account for substantial proportions of variance in several of the disorder variables, but only for teacher reports of safety are all links specified by the school administration theory present: Higher school enrollment is related to lower teacher safety, controlling on community and student characteristics which are externally determined. The school administration and teacher morale and planning variables also contribute substantially to the explanation of teacher safety.

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[1] Correlations among the administration variables ranged from .51 to .86. It was not possible to separate the effects of the later intermediate variables--planning and action and morale--from the earlier ones--teachers' perceptions of the school administration and rule clarity. All four intermediate variables were entered in the same step in the regression analysis.

Table 2 shows the association between school size and each of the variables that school size affects, according to the models in Figure 1 and 2. The first column shows the correlation between school size and the outcome measure. The second column shows the proportion of variance in the outcome explained by the addition of school size to an equation containing the five background measures--percentage of students Black, percentage of families on welfare, community crime, population of the area, and average age of the student. School size is associated with several of the measures, but the association is substantially reduced in most cases when background measures are introduced. Large schools do have lower levels of participation, but the schools with higher levels of participation also have younger students and higher proportions of black students. When these characteristics are statistically controlled, enrollment is no longer related to participation. Table 2 shows that school enrollment contributes significantly to the explanation of school safety, teachers' perceptions of the school administration, and staff morale once background characteristics are statistically controlled.

Table 3 implies that the effect of school size on school safety is mediated by school administration: Highly significant total effects of school enrollment on school safety are substantially reduced by the inclusion of smooth administration in the equation. A similar pattern is observed for teacher victimization, but the effects are not statistically significant.

Table 2

Association of Enrollment with Disorder and Theoretical Predictors of Disorder (N=42 Schools)

Outcome measure	r with enrollment	Incremental R^2 for enrollment
Student victimization	-.49**	.03
Student safety	.15	.05*
Serious delinquency	-.16	.04
Drug involvement	.38*	.00
Teacher victimization	.13	.04
Teacher safety	-.42**	.11**
% participating	-.46**	.07
Variety of involvement	-.52**	.02
Social integration	-.04	.02
Positive self-concept	-.00	.01
Interpersonal competency	.36	.01
School attachment	.00	.00
Smooth administration	-.44**	.20**
Rule clarity	-.40**	.05
Staff morale	-.37*	.11*
Planning and action	-.28	.05

Note. The incremental R^2 is the proportion of variance in the outcome explained by the addition of school enrollment to an equation containing the following background measures: % Black, % families on welfare, community crime, population of the area, and average age of the student.

*$p<.05$.
**$p<.01$.

Table 3

Total and Direct Effects of
School Enrollment on School Disorder
(N=42 Schools)

Predictor	Student safety		Teacher safety	
	Total	Direct	Total	Direct
% Black	-.08	-.13	.33*	.24
% welfare	-.35*	-.43**	-.21	-.30
Population	-.15	-.22	.16	.05
Community crime	-.38*	-.29*	-.33	-.18
Average age	.47**	.56**	-.05	.04
Enrollment	-.32*	-.21	-.47**	-.21
Smooth administration	--	.17	--	.41**

Note. Direct effects are standardized regression coefficients in an equation containing all seven predictor variables. The total effects for the five background variables are standardized regression coefficients in an equation containing only the background variables. The total effect for enrollment is the standardized regression coefficient in an equation containing enrollment plus the five background variables.

*$p<.05$.
**$p<.01$.

Individual Level Analyses

The original theory of undermanning (Barker, 1960) dealt with consequences for individuals who participated in undermanned behavior settings. Indeed, several of the manning theory studies (Grabe, 1981; Wicker, 1968, 1969; Willems, 1967) have stated their hypotheses in terms of individual level processes arising in organizations of different size. They state that individuals who participate in activities in undermanned settings experience pressure to maintain their participation and to conform to the expectations of the others in the setting. These individuals work harder at their tasks, take on more responsible roles, perform more complex tasks, and develop self-concepts as functional human beings to a greater extent than do participants in similar activities in adequately or overmanned environments. They feel more of a sense of commitment and attachment to school than do their counterparts in adequately or overmanned environments. Involvement in undermanned activities, but not necessarily in adequately and overmanned activities, should increase attachment and commitment and subsequently reduce delinquent behavior, according to social control theory. Hence, manning and social control theories predict that involvement in extracurricular activities will reduce delinquency in small, but not necessarily in large, schools.

Tables 4 through 6 examine this hypothesis. These tables are based on 7163 students surveyed in the 42 SAES secondary schools included in the foregoing school-level analyses. In these analyses, gender, age and probability of academic success relative to other students in the school

("marginality"), which are background variables highly predictive of level of delinquent behavior, are held constant. The model in Figure 2 is estimated for males and females in small (enrollment ranges from 388 to 625), medium (644 to 1089) and large (1104 to 3100) schools. Roughly one-third of the schools in the sample fall into each size category. The number of students surveyed in the smaller schools is greater than the number surveyed in larger schools because entire populations were surveyed in these schools rather than random samples of approximately 200 students.

Table 4 shows that the attitude variables--self-esteem, school attachment, social integration, and interpersonal competency--are highly predictive of delinquent behavior and drug involvement in small, medium and large schools, but are least predictive in small schools. Participation in extracurricular activities has a much smaller effect on delinquent behavior than do the attitude variables. For males, participation and variety of participation significantly contribute to the explanation of the outcomes only in large schools. The same pattern applies for female drug involvement. The background variables, age, and relative marginality in the school, always contribute significantly to the explanation of delinquency--and this effect, too, is larger in larger schools.

Table 5 shows a similar pattern for the attitude outcomes. Participation (percent participating at all and variety of involvement) is a weak predictor of positive self-concept, school attachment, social integration, and interpersonal competency. The largest contribution is for

Table 4

Incremental Percentage of Variance Explained in Delinquency Outcomes by Sets of Predictors

Group	Serious delinquency				Drug involvement			
	Background	Participation	Attitudes	Total R^2	Background	Participation	Attitudes	Total R^2
Males								
Small schools	.03**	.00	.14**	.18**	.07**	.00	.10**	.17**
Medium schools	.03**	.00	.24**	.27**	.05**	.01	.14**	.20**
Large schools	.04**	.02**	.18**	.24**	.12**	.03**	.13**	.28**
Females								
Small schools	.02**	.01**	.07**	.10**	.05**	.00	.10**	.14**
Medium schools	.04**	.01*	.16**	.21**	.05**	.01*	.15**	.21**
Large schools	.05**	.01*	.16**	.22**	.18**	.03**	.15**	.36**

*$p<.05$.
**$p<.01$.

Table 5

Incremental Percentage of Variance Explained in Attitudinal Outcomes by Sets of Predictors

	Positive self-concept			School attachment			Social integration			Interpersonal competency		
	Background	Participation	Total R2	Background	Participation	Total R2	Background	Participation	Total R2	Background	Participation	Total R2
Males												
Small	.23**	.00	.23**	.06**	.00*	.07**	.03**	.00	.03**	.05**	.01*	.06**
Medium	.23**	.01	.24**	.07**	.02**	.09**	.08**	.01	.09**	.05**	.01	.06**
Large	.16**	.02**	.18**	.03**	.03**	.06**	.02**	.01*	.03**	.05**	.01	.05**
Females												
Small	.27**	.00	.27**	.06**	.00*	.06**	.04**	.01**	.04**	.06**	.00*	.07**
Medium	.22**	.00	.22**	.09**	.01**	.10**	.09**	.00	.09**	.04**	.00	.05**
Large	.22**	.01*	.24**	.05**	.03**	.09**	.04**	.01*	.05**	.04**	.02**	.06**

*p<.05.
**p<.01.

school attachment in large schools, where participation accounts uniquely for 3% of the variance in school attachment. In general, the contributions are largest in large schools.

Table 6 shows the regression coefficients relating the delinquency and attitude outcomes to the variety of extracurricular involvement. The "total effects" in the table are the regression coefficients for variety of involvement in an equation predicting the delinquency and attitude outcomes from involvement, relative marginality and age. The table shows that differences in the effect of involvement on delinquency for schools of different sizes are statistically significant. The association between delinquency and involvement increases as school size increases. The restraining influence of involvement on delinquency reaches statistical significance primarily in large schools.

The remaining rows in the table show that the effect of involvement on positive self-concept, social integration, interpersonal competency and attachment to school is similar in schools of different sizes. None of the differences reach statistical significance. More of the coefficients reach statistical significance in small schools than in medium and large schools; all but the unstandardized coefficients are similar for all schools. These analyses and others not presented which examine the indirect effect of involvement via the attitude outcomes suggest that most of the restraining effect of involvement on delinquency--especially on drug involvement--is not mediated through attitudes.

Table 6 provides no support for the manning-social control theory proposition that involvement in activities in undermanned settings

Table 6

Total Association and Total Effects of Involvement in Extracurricular Activities--by Gender and School Size

Outcome	Small schools r	Small schools Total effect	Medium schools r	Medium schools Total effect	Large schools r	Large schools Total effect
Females	(N=2085)		(N=1260)		(N=757)	
Serious delinquency	.08*	.11**b (.06)	-.08*	-.01a (-.00)	-.09*	.03a (.02)
Drug involvement	-.05	.02d (.03)	-.11**	-.04a (-.07)	-.28**	-.10**a (-.20)
Positive self-concept	.18**	.05** (.05)	.20**	.03a (.03)	.26**	.04 (.04)
School attachment	.12**	.06** (.08)	.17**	.07*a (.09)	.21**	.06a (.09)
Social integration	.13**	.08** (.11)	.12**	.02 (.03)	.14**	.05 (.08)
Interpersonal competency	.12**	.09** (.10)	.12**	.05a (.06)	.17**	.13** (.15)
Males	(N=1521)		(N=905)		(N=635)	
Serious delinquency	.00	.04c (.04)	-.02	.02e (.03)	-.16**	-.09* (-.11)
Drug involvement	-.08*	-.02c (-.04)	-.10**	-.07* (-.13)	-.22**	-.11**a (-.23)
Positive self-concept	.08*	-.02* (-.02)	.14**	.03 (.03)	.22**	.05 (.06)
School attachment	.12**	.07** (.10)	.12**	.06* (.10)	.17**	.06a (.09)
Social integration	.03	-.01 (-.02)	.10**	.04 (.07)	.09*	.02 (.04)
Interpersonal competency	.10**	.06* (.08)	.11**	.07* (.09)	.11**	.04 (.06)

Note. Total effects are standardized regression coefficients for involvement in a regression of the outcome from involvement, marginality and age. Unstandardized coefficients appear in parentheses.

[a]Effect of involvement varies significantly ($p<.05$) for marginal and other students.
[b]Difference between regression weights for small and medium schools differ at $p<.01$ level.
[c]Difference between regression weights for small and large schools differ at $p<.05$ level.
[d]Difference between regression weights for small and large schools differ at $p<.01$ level.
[e]Difference between regression weights for medium and large schools differ at $p<.05$ level.

*$p<.05$.
**$p<.01$.

increases sense of commitment and obligation to the school and functional self-concept, and provides a restraint against delinquent behavior. We find instead contradictory evidence that involvement may restrain delinquent behavior in larger school settings.

To summarize the results of the individual-level analyses to this point: Analyzed according to the model in Figure 2, the SAES data imply that involvement increases self-esteem, school attachment, social integration and interpersonal competency for some students in some types of schools, but that the effect is not larger in smaller schools where behavior settings are assumed to be relatively undermanned. Involvement appears to have a larger restraining influence on delinquency in larger schools. In analyses not shown, the effect of involvement on delinquency appeared not to be mediated by the attitude variables in the study. The effects of involvement on delinquency were not substantially lowered when the attitude variables were added to the equation.

Marginality and Involvement

We also hypothesized that involvement provides a more potent restraint against delinquency for marginal students because they lack alternative routes to success. Research on manning theory has provided some evidence that involvement and sense of obligation are higher among marginal students in small than in large schools. Hence, delinquency among marginal students should be lower in small schools than in large schools because a) involvement and sense of belonging should be higher for smaller than for larger school marginal students, and b) involvement should provide a more powerful restraint against delinquency for marginal than for other students.

Table 7 contrasts students whose scores are one standard deviation below their school mean on marginality to other students. Marginal students, as expected, engage in delinquent activities more, are less often involved in extracurricular activities, and have a lower sense of attachment to school than do other students. Also, students in the smaller school category report less delinquent behavior and are more attached to school,[2] and the difference across school size categories is larger for marginal than for other students. Some of the differences for marginal students are very large: Marginal females in large schools, for example, report using more than twice as many different kinds of drugs as do marginal students in small schools. Large differences in participation rates are also evident for marginal students in small, medium, and large schools. No such difference is observed for nonmarginal students.

Table 6 showed that some of the regression weights of delinquency and the attitude outcomes on involvement differed significantly for marginal and other students. Table 8 shows the actual regression weights for the two groups for those equations for which a statistically significant involvement by marginality interaction was found. First, it should be noted that no such interaction was found for students in small schools. In small schools the effect of involvement on delinquent behavior was no more restraining for marginal than for nonmarginal students. In those medium and larger school equations in which the effects

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[2]The comparisons on this table are not controlled for differences in background characteristics and characteristics of the student population which we know differ for schools of different sizes. These differences should not be interpreted causally.

Table 7

Means and Standard Deviations
for Delinquency, Social Integration and
Involvement--By Gender, School Size, and Marginality

	Small schools			Medium schools			Large schools		
	M	SD	N	M	SD	N	M	SD	N
Females									
Serious delinquency									
Marginal	.08**	.14	665	.09	.18	282	.14	.19	203
Other	.04**	.09	2635	.05	.12	1488	.06	.10	897
Drug involvement									
Marginal	.24**	.29	654	.32	.35	281	.60	.36	203
Other	.20**	.26	2615	.20	.28	1493	.31	.31	882
Attachment to school									
Marginal	.63**	.26	658	.58	.29	268	.52	.28	186
Other	.74*	.23	2641	.72	.24	1448	.72	.24	798
% participating									
Marginal	.77**	.42	695	.68	.46	304	.65	.48	208
Other	.88	.32	2795	.89	.31	1566	.88	.32	933
Males									
Serious delinquency									
Marginal	.18**	.24	668	.20	.25	292	.22	.24	232
Other	.11**	.18	2076	.12	.19	1282	.13	.19	818
Drug involvement									
Marginal	.28**	.31	677	.34	.33	305	.48	.36	228
Other	.20**	.26	2074	.22	.28	1281	.28	.30	813
Attachment to school									
Marginal	.57**	.26	703	.55	.28	304	.54	.28	217
Other	.69**	.25	2157	.65	.26	1245	.69	.24	716
% participating									
Marginal	.79**	.41	776	.76	.43	351	.60	.49	255
Other	.87	.33	2370	.87	.34	1458	.84	.37	881

Note. Calculations are based on all students in secondary schools who participated in the April, 1982, School Action Effectiveness Study student survey. All differences between marginal and other students are highly significant ($p \leq .001$).

*Mean difference among students in small, medium, and large schools is significant at the $p < .05$ level.

**Mean difference among students in small, medium, and large schools is significant at the $p < .01$ level.

Table 8

Total Association and Total Effects of Involvement in Extracurricular Activities for Marginal and Other Students

	Females							
	Medium schools				Large schools			
	Marginal (N=181)		Other (N=1079)		Marginal (N=141)		Other (N=616)	
	r	β	r	β	r	β	r	β
Serious delinquency	-.12	-.07 (-.08)	-.03	.01 (.00)	-.12	-.12 (-.18)	.03	.08 (.04)
Drug involvement	-.06	-.03 (-.06)	-.08**	-.05 (-.07)	-.28**	-.13 (-.35)	-.17**	-.09* (-.17)
Positive self-concept	.19**	.11 (.12)	.12**	.02 (.02)	--	-- --	--	-- --
School attachment	.14	.09 (.17)	.12**	.06* (.08)	.33**	.24** (.52)	.09*	.03 (.04)
Interpersonal competency	.25**	.21** (.31)	.06*	.02 (.02)	--	-- --	--	-- --
	Males							
	Marginal		Other		Marginal (N=138)		Other (N=497)	
	r	β	r	β	r	β	r	β
Drug involvement	--	-- --	--	-- --	-.22**	-.18* (-.50)	-.16**	-.08 (-.17)
School attachment	--	-- --	--	-- --	.15	.12 (.25)	.10*	.04 (.07)

Note. Total effects are standardized regression coefficients for involvement in a regression of the outcome from involvement, marginality and age. Unstandardized coefficients appear in parentheses.

*$p<.05$.
**$p<.01$.

of extracurricular participation differed for marginal and nonmarginal youths, the effects for marginal youths are in the hypothesized direction in all but one instance: Involvement restrains delinquent behavior and increases self-esteem, school attachment, and interpersonal competency more for marginal than nonmarginal youths.

To summarize the results for marginal vs. other students: Differences on delinquency, attachment to school, and participation for students in schools of different sizes is more marked for marginal students than for others. Involvement does not have more of a restraining influence on delinquency for marginal students than nonmarginal in small schools as hypothesized, but where a difference exists in medium and large schools it is in the hypothesized direction.

Case Studies of Schools Whose Sizes Changed

What is the effect on school disorder and on the theoretical mediating variables of a dramatic change in school size? The enrollments of five of the SAES schools changed drastically during the study as districts underwent school consolidations or opened new schools. Table 9 shows what happened to these schools. We have 1981 baseline data and two post-change surveys for three schools that changed in the fall of 1981 and one post-change survey for two schools that changed in the fall of 1982. The figures in the table are differences in school averages between the baseline measures and the measures from the first and second survey administration after the change.

Table 9

Change in Disorder and Theoretical Predictor Variables
One and Two Years After Change in School Size

Outcome measures	Increasing school size			Decreasing school size				
	School 1 change after		School 2 change after	School 3 change after		School 4 change after	School 5 change after	
	One year	Two years	One year	One year	Two years	One year	One year	Two years
Disorder								
Student victimization	+.03	+.05**	+.01	+.03	+.01	+.05**	.00	.00
Student safety	--a	--a	.00	--a	--a	.00	--a	--a
Serious delinquency	-.01	-.01	-.02	+.01	+.01	+.02**	+.02*	.00
Drug involvement	-.04	+.01	-.01	+.06	+.07	+.03*	+.02	+.05**
Teacher victimization	--a	--a	+.02	--a	--a	+.04	-.08	-.15*
Teacher safety	--a	--a	-.51**	--a	--a	+.06	+1.16*	+1.49
Student attitudes and involvement								
Social integration	.00	-.10**	-.05*	+.02	-.08*	-.03	+.02	+.04
Positive self-concept	+.03	-.01	+.03	+.04	.00	+.03*	+.03	+.05**
School attachment	+.01	-.03	-.08**	-.01	-.07*	-.01	-.01	-.01
Interpersonal competency	--a	--a	-.01	--a	--a	+.04	-.01	+.03*
Variety of involvement	--a	--a	-.03*	--a	--a	.00	+.02	+.01
Administration								
Staff morale	--a	--a	-.22**	--a	--a	-.02	+.19**	+.12*
Planning and action	--a	--a	-.03	--a	--a	.00	+.15*	-.03
Smooth administration	--a	--a	-.16**	--a	--a	+.06	+.14*	-.03
Rule clarity	.00	+.03	-.01	--a	--a	-.03	--a	--a
Beginning enrollment		1100	656		720	1456		1059
Ending enrollment		1861	934		490	870		625
Net change		+761	+278		-230	-586		-434

[a]Baseline measure unavailable.

*$p<.05$.
**$p<.01$.

The two schools that increased in size became somewhat more disorderly--student victimization rose significantly in one and teacher reports of safety declined significantly in the other. Students became less socially integrated in both schools, and were less involved in the one school for which we have good data on involvement. Staff morale declined and teachers reported more problems with the school administration after the population increased.

The clear picture created by the results for schools that increased in size clouds when we look at the schools that decreased in size. We would expect to see the opposite pattern, but instead we see disorder rising in these schools as well. School four experienced significant increases in student victimization, drug involvement and serious delinquency. School five also experienced more drug involvement, although teacher reports of safety and victimization moved significantly in the predicted direction. Student attitudes gradually became more positive in school five, but they became more negative in school three. Student involvement did not increase significantly in the two schools for which we have involvement data. The administration variables moved in the predicted direction, although initial improvement in teachers' perceptions of the administration and reports of planning and action in school five declined in the second year after the reduction in school size.

The results of these case studies provide some indications that teacher perceptions of school safety may depend upon the size of the school. They are consistent with the interpretation that as the school's enrollment increases, school management weakens. One can

easily imagine teachers' confidence in the administration weakening as communication bogs down, administrative feedback to staff becomes more infrequent, and staff input is sought less frequently. Teachers may begin to sense that their efforts are unappreciated and ineffective, and they may grow apathetic and fearful.

The data are inconsistent with the manning theory-social control hypothesis that as school size increases, participation and social integration decrease and delinquency increases.

Summary and Discussion

The results of this study of the effects of school size on school disruption are summarized below:

1. School size is related to school safety and to teacher perceptions of the school administration and their general morale. These associations persist when statistical controls for community characteristics and characteristics of the students which are externally determined are statistically controlled. School size is not so related to other measures of school disorder, student involvement in extracurricular activities, positive student attitudes, clarity of school rules and teacher reports of planning and action.
2. Positive student attitudes, including social integration, attachment to school, positive self-concept and interpersonal competency, reduce school disorder, but participation in extracurricular activities and school size are not implicated in the process.
3. Staff morale, teachers' perceptions of the administration of the school, clarity of school rules, and teachers' reports of planning

and action in their school reduce school disorder. Large schools appear to promote negative teacher perceptions of school administration and low staff morale.

4. Participation rates are lower in large schools as manning theory predicts, but differences in the ethnicity and ages of the students in schools of different sizes account for the differences in participation rates. Students in smaller schools are not more socially integrated and more attached to school, as manning theory predicts.
5. At the individual level of analysis, positive student attitudes decrease delinquent behavior for students in schools of all sizes, but the effect is largest in large schools.
6. Individual-level analyses provide evidence opposite that predicted by manning theory: Participation in extracurricular activities decreases delinquency for students in large but not in small schools.
7. School size appears more related to student outcomes for marginal students than for others. The difference between the mean scores on delinquency, drug involvement, attachment to school and involvement for students in small, medium and large schools are greater for marginal than for other students.
8. In small schools the effect of involvement on delinquent behavior is no more restraining for marginal than for nonmarginal students. But in medium and large schools, involvement provides a more powerful restraint against delinquent behavior for marginal than for other students.
9. Studies of schools which increased and decreased their student populations suggest that teacher perceptions of safety may decrease with

increasing school size as their perceptions of the school administration grow more negative.

This study provides no support for a manning theory-social control theory explanation of why small schools have a lower level of disruption. Both school level and individual level analyses support social control theory: Social bonding reduces delinquency regardless of school size. The analyses imply, however, that the association between participation in extracurricular activities and school size is spurious, and that the restraining effect of involvement on delinquency is present only in large schools. The hypothesized larger effect of participation on social integration and delinquency in undermanned settings is not found. The effect is larger in larger schools where behavior settings are assumed to be adequately manned or undermanned, and the effect does not appear to be mediated by the hypothesized intervening variables.

The comparisons of marginal to other students indicate that involvement is particularly important for students who lack academic routes to success. Marginal students in large schools participate less frequently and are less attached to school than are marginal students in smaller schools, but involvement does not provide an effective restraint against delinquency in small schools.

The unexpected restraining influence of involvement on delinquency in large but not small schools is puzzling. It is possible that the nature of the activities differs in schools of different sizes. The SAES data do not contain sufficient information about the nature of the extracurricular activities to address this issue. It is also possible

that the significant "effects" are not really effects of involvement but reflections of the different kinds of students who happen to participate in extracurricular activities in schools of different sizes. We have already seen that the student populations in schools of different sizes in the SAES data differ in terms of age and ethnicity. Perhaps among the older nonminority students (those in large schools) in our sample, those students who participate in extracurricular activities are less likely to begin with to engage in delinquent behavior. To the extent that such preexisting differences are independent of the background measures used as statistical controls in the analyses, this report may not adequately control for selection biases.

The study provides some support for the notion that school disorder results from poor school administration. In large schools communication, feedback about performance, and staff involvement in decisionmaking break down. Teachers in these schools lose confidence in the administration and feel ineffective. Disorder results.

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